

## Abstract of the Disclosure

A film (7) is formed by electrodeposition, thermal CVD, or spraying. After that, the film is irradiated with a laser beam. Carbon nanotubes that form the film (7) are disconnected by laser irradiation, so that the density of the carbon nanotubes is optimized. When the film (7) is formed in this manner, stable emission can be obtained from a cathode structure (5).